



John Bennett  
Farmer

# Innovation at Farm Level

# About me....

- Farming for 46 years
- Early innovator zero till systems

## Awards

- Saskatchewan Soil Conservation Farmer of the Year
- Manitoba-North Dakota zero till Farmer of the Year
- Honouree life membership in Saskatchewan Institute of Agrologists
- Country Guide's 13 Most Influential Farmer in Canada



# Points to address

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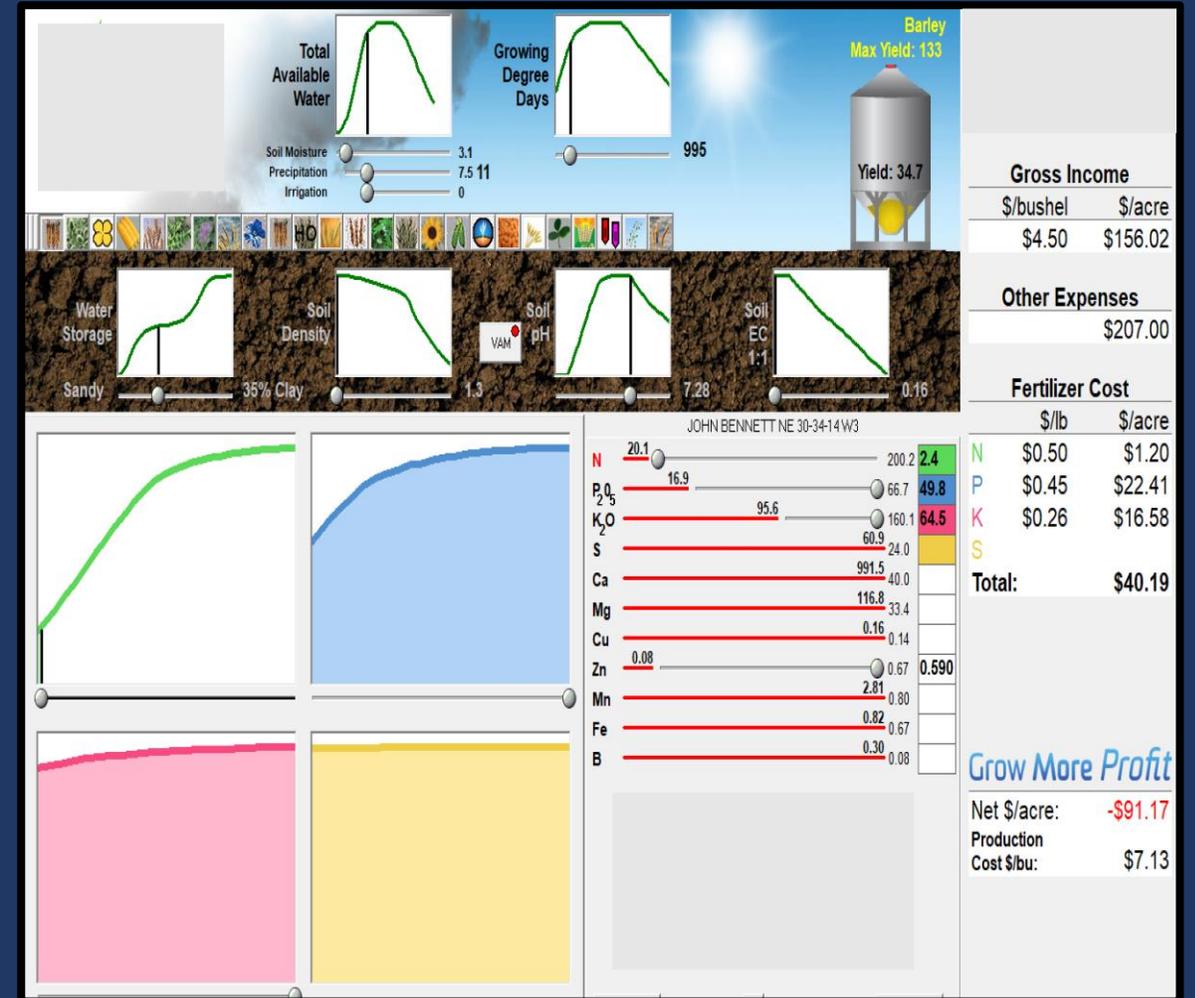
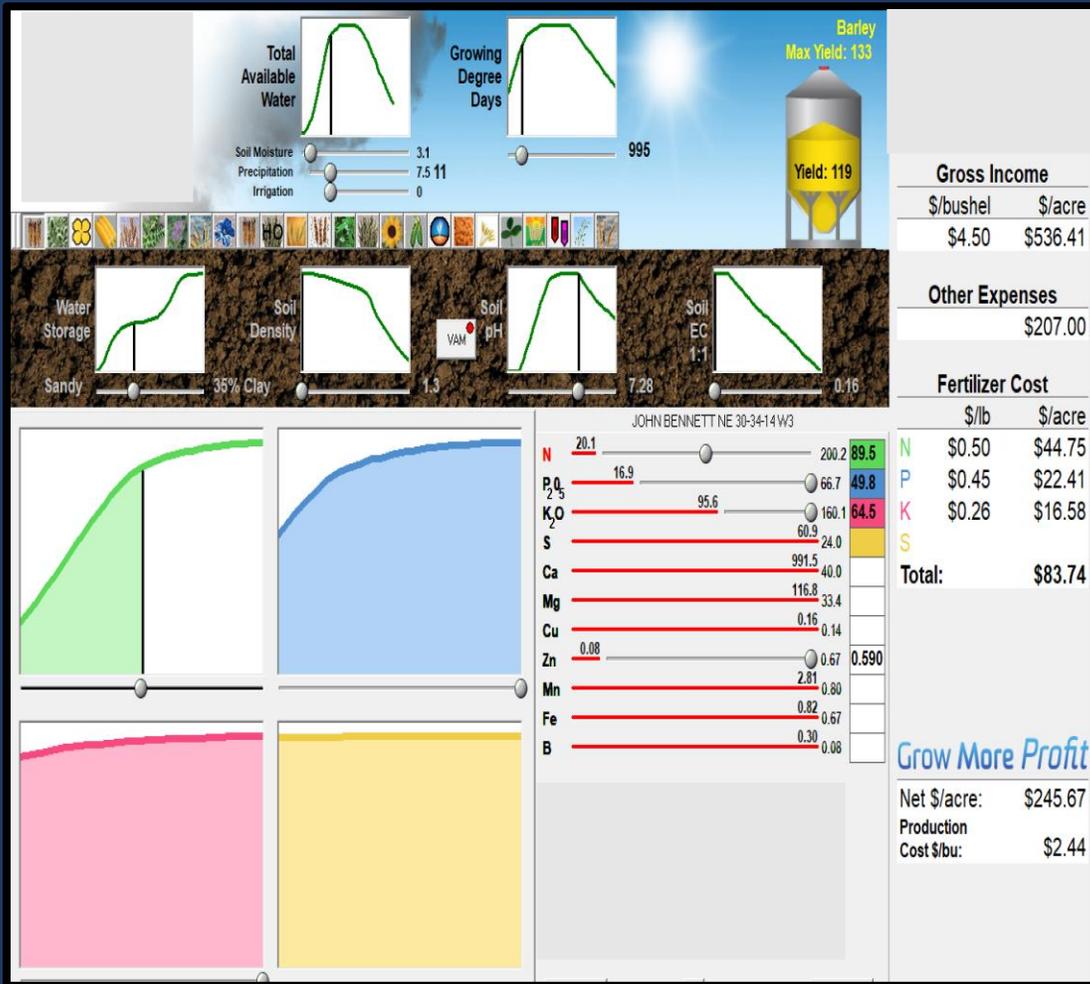
- 1. Efficiency
- 2. Technology Potential (future technology innovations to improve efficiency)
- 3. Enhancing Soil Quality
- 4. Markets Providing Incentive



## Efficiency and Enhancing Productivity

### A. Water Use

- Tall stubble catches snow
- Soil structures give us good moisture infiltration
- Reduced evaporation



# Efficiency & Enhancing Productivity

## B. Fertility Management

- Plant root simulator use for soil tests
- Maximizing yield with minimum input

# Efficiency and Enhancing Productivity

## C. Fixed Costs

- Fewer operations
- 1<sup>st</sup> operation is one pass seeding

## 1975

- 300 seeded acres, 200 hundred tractor hours annually

## 2015

- 1 500 seeded acres, 200 hundred tractor hours annually



# Efficiency and Enhancing Productivity

## C. Fixed Costs

- 2nd operation is weed control
- 3<sup>rd</sup> operation is straight cut combining

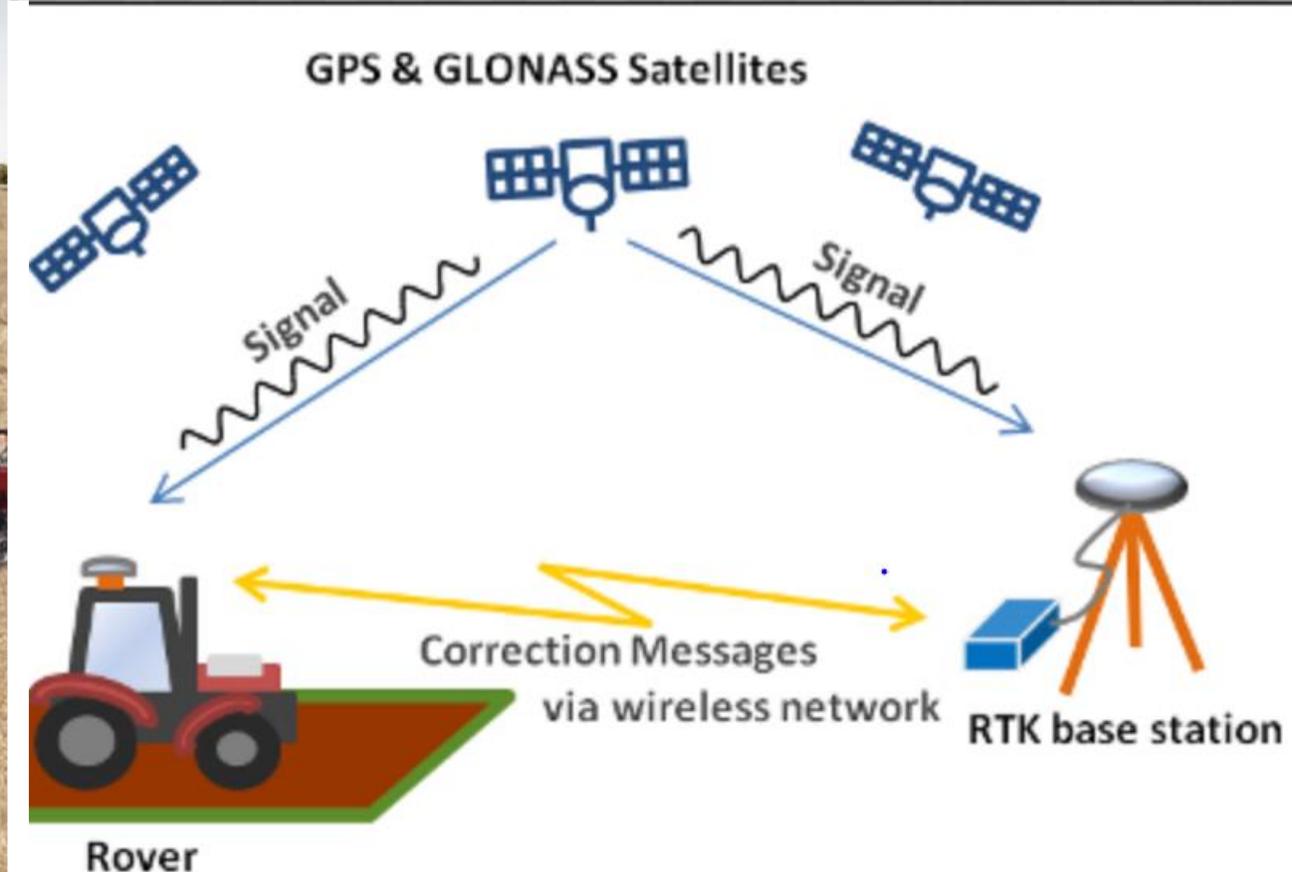
**1975**

swathing, combining, residue management

**2015**

one pass straight combining (canola, peas, flax, cereals)





## Technology Potential for Improving Efficiency

- RTK & autonomous vehicles

# Technology Potential for Improving Efficiency

## 2. True Guide



# Technology Potential for Improving Efficiency

## 3. Tramline



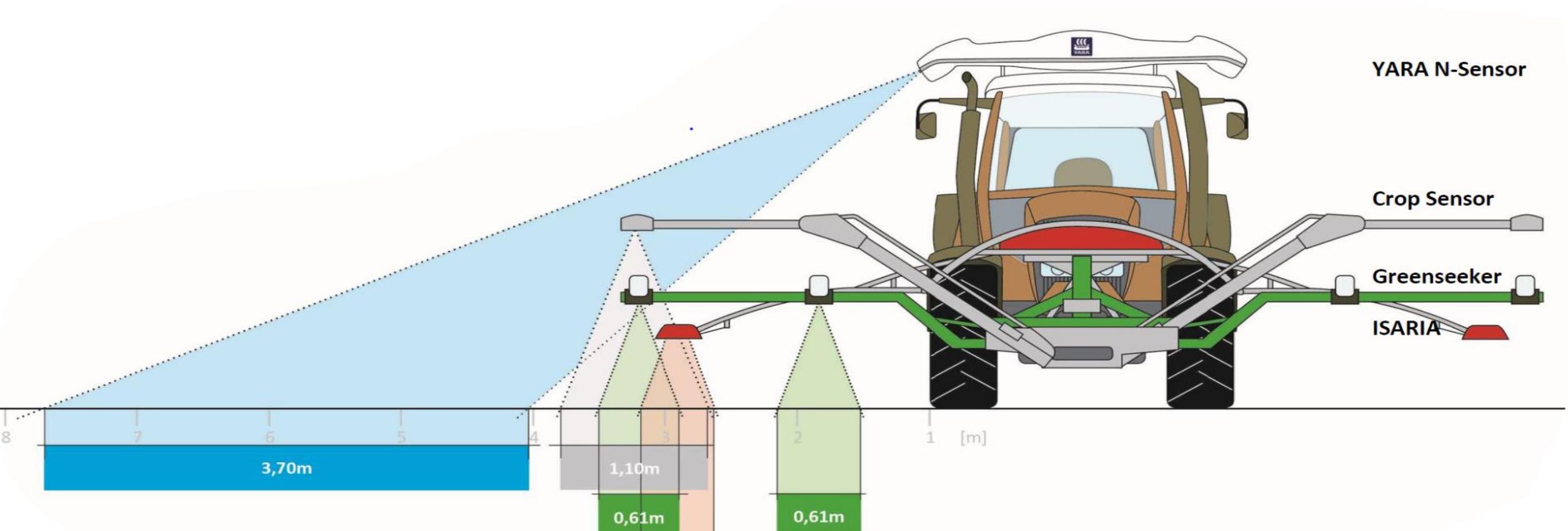
# Technology Potential for Improving Efficiency

## 4. Smart Spraying (Weed Specific)



# Technology Potential for Improving Efficiency

## 5. Application Sensors



# Technology Potential for Improving Efficiency

## 6. Robotic Farm Implements



### **Bonirob, the Weed Control Machine**

Bonirob and his buddies can work in tandem to remove weeds from the land and applying fertilizer. The robot is autonomous, and designed to work in tandem with other models.

# 3. Enhancing soil quality

3.1 Diversity

3.2 Crop Rotations

3.3 Intercropping

3.4 Forage Grazing

3.5 Holistic Management

3.6 Nutrient Recycling - Microbial Activity & Fungi



1. Can markets create incentive to improve soil quality

2. Soil organic matter  
(soil carbon)

Markets Providing Incentive



First trades  
were leases

1. Pacific North West Direct Seed Association (PNWSD)
  - = Seller
  - Entergy = Buyer
  - Environmental defense = Broker
2. Pilot Emission Reduction and Removal Learning (PERRL)
  - Canadian farmer (seller)
  - Government of Canada (buyer)
  - Saskatchewan Soil Conservation Association (SSCA)
  - = Broker



# Failures

1. London Carbon Exchange & European Carbon Exchange

2. Chicago Climate Exchange

# Alberta Carbon Market



13 MILLION TONE  
TRADED?



NO PRICE DISCOVERY



NO BANKABILITY



NO GROWER(FARMER)  
OWNERSHIP

END

Questions....

